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MICROTEKTITE DISCOVERED IN BEIJING

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MICROTEKTITE DISCOVERED IN BEIJING

Li Dingrong, Wang Ande, Xie Zhenzhao and
Wang Wanzhen;*

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In the summer of 1979 the authors discovered more than 40 tiny, vitreous *****/128
spheres with diameters between 0.17 and 0.65 millimeters in rock cores of Shun
shaft No. 1; these tiny vitreous balls are restricted to depths of 182 to 327 meters
below ground. According to the formational era, producing states, forms, physical
properties and main chemical constituents, the authors considered that these tiny
vitreous balls were microtektites.

These microtektites were deposited in lake facies efflorescent arenaceous
clay (lithological characteristics) in the middle and lower Dili Group of the middle
Pleistocene. There is no corrosion phenomenon at the surface of the spheres;
filaments on the spheres are well preserved, apparently (the microtektites) were
never moved nor were they redeposited.

Under the microscope, most of these vitreous spheres appeared to be spherical,
tadpole- and dumbbell-shaped, generally with very smooth surfaces. In quite a few
of them, there are elongated filaments; some filaments are of a bend and torsional

* State Bureau of Seismology

** Beijing Normal University

***Academy of Sciences of China, Institute of Geology

**** Beijing Institute of Uranium Ore Geology

***** Numbers in the margin indicate pagination in the foreign text.

shape, light yellow to deep brown in color. Under a perpendicularly intersecting polariscope, the spheres appear to be isotropic bodies, and their refractivity is 1.590 to 1.613, as measured by the oil immersion method. There are no crystal inclusions in the vitreous spheres, and many of them contain gas bubbles.

The electron probe section of the Beijing Institute of Uranium Ore Geology determined that the percentage of chemical composition of the vitreous spheres (by weight) was: SiO_2 , 37.25; Al_2O_3 , 16.60; FeO , 0.47; MgO , 15.25; CaO , 27.11; Na_2O , trace; K_2O , 2.94; TiO_2 , 0.08, and MnO , 0.85.

From the chemical composition, these vitreous spheres discovered in Beijing appear to be different from known tektites (including China's "Lei Gong Mo"), microtektites, and "grass-wood" silica glass; the spheres are microtektites of high calcium, low silicon type.

The absolute age of the microtektites can be obtained using the fission tracing method, which provides an important basis for comparative strata and determination of ages of the Cenozoic era. This provides a new method and means for studying the Quaternary geology of China.